year 1715, at least it is *most* highly probable, from *this* peculiar circumstance, that no ancient writer *whatever has* taken any notice of them, nor even any *one* modern, previous to the above *period.*"

The words restored are those italicised. The passage, as it came from Dr. Langhorne, is excusable for the knowledge displayed, but cut up as it is by the *modern* editor, shows great lack of it; and more than this, the honesty is not what every one would admire. Both, however, are incorrect. Dr. Halley, in the Phil. Trans., No. 347, page 406, gives a history of auroral observations, and for the information of "C. P." I have extracted a few particulars showing that the "northern lights have been observed and recorded long before 1715.

The first account, says Dr. Halley, recorded in English annals is that of the appearance which was noticed January 30, 1560, and called "Burning Spears," by the author of a book entitled "A Description of Meteors," by W. F., D.D. London: 1654. The next of a like kind was the appearance recorded by Stow, which occurred on October 7, 1564.

In 1574, Camden and Stow inform us, an Aurora Borealis was seen for *two* successive nights, viz., the 14th and 15th of November, with appearances similar to those observed in 1716, and which are not commonly noticed. The same phenomenon was twice seen in Brabant in 1575, viz., on the 13th of February and the 28th of September, and the circumstances attending it were described by Cornelius Gemma, who compares them to spears, fortified cities, and armies fighting in the air. In the year 1580, M. Mastline observed these *phasmata*, as he calls them, at Baknang, in the county of Wurtemburg, in Germany, no less than seven times in the space of twelve months; and again at several different times in 1581. On September 2, 1621, the same phenomenon was seen all over France; and it was particularly described by Gassendus in his "Physics," who gave it the name of "Aurora Borealis." Another was seen all over Germany in November 1623, and was described by Kepler. Since that time, for more than eighty years we have no account of any such phenomenon either at home or abroad. In 1707 Mr. Neve observed one of small continuance in Ireland. In the years 1707 and 1708 this sort of light had been seen no less than *five* times.

There is not the least doubt in my mind that the commentator of Collins must have been wholly ignorant of the literature of scientific records, else he would never have said what he did on the lines in question.

In the Orkneys the Northern Lights are known by the name of the "merry dancers." And it is not at all surprising among an unphilosophical people, that this, one of the grandest phenomena in nature, should be the subject on which the imagination fondly dwells.

The various conflicts of Odin may probably have been suggested by the dancing and flickerings of these Lights.

In the "Prosa Edda" there is a direct allusion to the Aurora Borealis; at least, the translation given in Mallett's "Northern Antiquities," edited by J. A. Blackwell (1847), page 404. It says:—"From his skull," continued Thridi, "they formed the Heavens, which they placed over the earth, and set a dwarf at the corner of each of the four quarters. These dwarfs are called East, West, North, and South. They afterwards took the wandering sparks and red hot flakes that had been cast out of Muspellheim, and placed them in the Heavens, both above and below, to give light unto the world, and assigned to every *other errant coruscation* a prescribed locality and motion."

If by "errant coruscation" he meant all the meteoric phenomena including the Northern Lights, then we have in this "Edda" the most ancient record of this observation.

JOHN JEREMIAH

43, Red Lion Street, Clerkenwell, Nov. 4

Hereditary Deformities

THE following instance of hereditary deformity is taken from Mr. L. W. Dillwyn's "Materials for a Fauna and Flora of Swansea and the Neighbourhood" (Swansea, 1848), a privately printed and therefore little known book. It will be seen that the evidence respecting the origin of the malformation is not conclusive: "In 1804 there was in the Neath Valley a remarkable breed of a sort of sheep-dog, with nothing more than a flat depression, about half an inch broad, between the nostrils, and was said to have originated in a bitch which had her nose longitudinally cloven by some accident. The breed retained this deformity forseveral years, but I believe it is now extinct."

The same book contains the following very remarkable illustration of the dispersion of species by means of oceanic currents: "On the sandy sea-shore, opposite the race-course on Crumlyn Burrows, and more than a mile from any sort of house or garden, Mr. L. L. Dillwyn, in 1839, found a thriving young plant of *Yucca gloriosa*, and it had all the appearance of having risen from a seed which the tide had cast there. Notwithstanding its exposed situation, and the looseness of the soil, this native of Carolina was not materially injured by the unusually severe winter of 1840-1, and Mr. Moggridge informs me that for two or three years it continued to thrive, till it was destroyed by a heap of shingle, which a violent storm and high tide threw over it."

R. G.

London, Nov. 7

Fertilisation of Plants

WITH candle in hand I have pored through all that you have printed of the speeches delivered by the members of the British Association at Liverpool, till I made a full stop at page 482, where I found "Observations on Protandry and Protogyny in British Plants, by A. W. Bennett, F.L.S.—The arrangement of the reproductive organs in hermaphrodite plants, the presence in the same flower of both pistil and stamens, suggested to the minds of the older botanists no other idea than that of self-fertilisation. It is, however, now generally admitted that even in hermaphrodite flowers, cross-fertilisation is the rule, self-fertilisation the exception. Two sets of facts have been especially observed—in particular by Darwin in this country, Hildebrand in Germany, and Delpino in Italy—to favour cross-fertilisation in hermaphrodite flowers, the phenomena of dimorphism and trimorphism, and the special arrangements which render it easier for the pollen to be brushed off by insects visiting the flowers than to fall on its own stigma." I cannot understand what this special arrangement which renders it easier for the pollen to be brushed off by insects visiting the flowers, can mean, when applied to the flowers of our forced peaches, French beans, &c., in blossom during the dark months of December, January, February, and March, when there is no insect on the wing.

As I do not keep bees in my garden, and there are none kept within a mile of it, and if there should a swarm of bees take up an abode near us, I destroy it, my peaches blossom and set their fruit without the assistance of the bee or any other insect. It is the sun that sets the blossoms, so to speak, and consequently we make the best use of every gleam of sunshine that by chance may visit the earth during the blooming time of our forced "things."

From this fact it must be evident that the Creator did not leave the all-important functions of the fertilisation of flowers to the insects which are simply in search of food, though it amuses our great thinking and closely observing philosophers to try to assure us plodding practicals of our sheer ignorance in the *modus operandi* of the fertilisation of hermaphrodite flowers.

That insects disperse the pollen of flowers there cannot be a doubt. Neither is there a doubt that hermaphrodite flowers fertilise their own pistils during the dark months of winter, without the presence of plundering insects. An industrious morphologist might find much employment in an early forced peach-house, in flower, say in January, on which the sun may not have gleamed since the first blossom opened.

A PEACH-GROWER

[Our correspondent should read the article in NATURE, No. 1, by Mr. Bennett, "On the Fertilisation of Winter Flowering Plants," which he will find to be in accordance with his own views.—*Ed.*]

Chip Hats

IN the last number of NATURE it is stated that palm-leaf was formerly imported to St. Alban's for the purpose of making *chip* hats. Allow me to state that the trade has never ceased. Large quantities of palm-leaf are imported under the name of "Brazilian grass," and many persons are constantly employed in St. Alban's and the villages around in plaiting these hats, principally for exportation. They are called *grass* hats.

Kew, Nov. 16

F. H. HOOKER

The Electric Telegraph and Earthquakes

THE use of the electric telegraph for recording earthquakes is not so new as the *Echo* (quoted in your last number, p. 35) supposes. Dr. Hector, Director of the Geological Survey, has, ever since the last great convulsions, systematically

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used the telegraph for this purpose in New Zealand, where indeed it forms an important element in the admirable system he has inaugurated for recording shocks throughout the islands. In his last letter he writes as follows:—"Not long ago, one operator asked another 200 miles distant 'Did you feel that?' and got the answer, 'No. What? Yes; there it is,' all in a breath, so to speak!"

Dr. Hector, writing in August last, goes on to say, "I have called attention to the coincidence of the aurora in both hemispheres on April 5, and can't help thinking that when our observations are sufficiently extended, we shall find many phenomena that are looked upon as local to be general. Could not NATURE give us a column recording such phenomena as auroras, earthquakes, tornados, &c., experienced in all parts of the world, somewhat in the form of an almanac? At the present one has to rummage over all sorts of periodicals, and after all find the matter most imperfectly recorded. We shall soon have a capital earthquake register here, since I induced the Government to cause the observers to report every shock they felt in the colony. Their number and coincidence is very remarkable, and I shall publish the results as soon as I have collected a sufficient number. I feel a great want of a good table eusmometer which should be cheap enough to distribute to all telegraph stations." Perhaps some of your readers can inform Dr. Hector where he can procure this great desideratum. JOS. D. HOOKER

Ocean Currents

AMONG the "Notes" in last week's number it is mentioned, on the authority of the *Inverness Courier*, that a number of glass globes had lately been washed ashore on the western coast of the Isle of Lewis. The question is asked, "Have these been used for some experiments made for the purpose of ascertaining the course of some ocean current?" I have seen precisely similar globes which had been cast ashore after rough weather on the western coast of Shetland; and I ascertained that they were floats used by Norwegian fishermen for buoying their long lines. North-easterly winds had drifted them to that part of the coast where they were found; and the same cause may be assigned for the occurrence of the glass globes or floats in the outer Hebrides. J. GWYN JEFFREYS

Nov. 12

IN reference to the statement (NATURE, Nov. 10) that glass globes have been washed ashore on the west side of the Isle of Lewis, may not these be floats which are used by the fishermen of Newfoundland? These are, I believe, occasionally found as far to the north-east as Nova Zembla, and this fact is, I think, not indicative of "some ocean current," but of the *aerial* current from the south-west, which is so prevalent in the north temperate region, and which may be called the *return* current of the north-east trade wind of the north tropical region.

This south-west wind from the sea modifies the summer heat and the winter cold of west coasts in the north hemisphere, and produces their so-called "insular climate."

GEORGE GREENWOOD, Col.

Brookwood Park, Alresford, Nov. 12

The Milky Way

THERE appears to be in Wales a remnant of a tradition connected with the Milky Way. During a short stay in Caermarthenshire, an old man, well read in local history, and who is apparently the oracle of the neighbourhood of Llangadock, directed my attention one evening to the Milky Way, remarking at the time "we shall have fair weather to-morrow, as you see it is in the south," meaning that the wind will blow from that quarter. My friend supported this extraordinary statement by appealing to the Welsh word "Heol y Gwynt," the *road or way of the wind*. Can any of your readers inform me whether this belt of stars is the subject of a fable in Britain, or how it came to be connected with foretelling the weather? The Scandinavians call it the "Road of Winter;" possibly "Heol y Gwynt" may be traced to northern influence, but, in the absence of facts, I will not commit myself to this explanation.

JOHN JEREMIAH

43, Red Lion Street, Clerkenwell, Nov. 12

P.S.—"Heol y Gwynt" is the only proper Welsh name for the Milky Way, and is not a mere local one.

The Colour of Butterflies' Wings

IN making some experiments a short time ago, I came across a fact of which I was hitherto ignorant. I wished to test the effect of acid on the colours of the wings of a butterfly or moth, and with this view applied muriatic acid to a dried and set specimen of the Six-spotted Burnet (*Zygæna filipendulæ*). The red parts immediately became yellow, while the dark parts were unaltered. In subsequent experiments the red was the only colour in any moth which underwent any change. When there was no red there was no change, and the only change was from red to yellow. Next I applied the acid to the red parts of the Red Admiral Butterfly (*Vanessa atalanta*), when, to my surprise, no change took place. Comparative examination under the microscope in no way cleared up the matter. I now seek for an explanation of this phenomenon, which appears to point out a clear difference in the nature of the moth and butterfly's wing. A remarkable fact, perhaps connected with this, is that a yellow variety is known of almost every moth containing red in the wings. Perhaps some of your scientific readers may be able to throw some light upon this subject. E. V. F.

Winchester, Oct. 18

A New Mode of Evolving Light

A SINGULAR phenomenon of the evolution of light has been recently observed by me. By tearing sharply a piece of twilled calico into strips in a room well guarded from light, a perceptible luminosity was clearly distinguishable, which appeared at its maximum at the final parting of the fabric. This phenomenon is exceedingly well marked in dry, new calico, and appears to me due to the dressing, as after being washed no light is evolved. Whether attributable to electricity, phosphorescence, or fluorescence, I leave for further investigation. The light appears similar to that produced on breaking a lump of sugar in the dark. So far as I can ascertain, the phenomenon of light being evolved on tearing a fabric is new, hence I hope worthy of notice in your valuable journal. ANDREW PRITCHARD

Canonbury, N.

Philology and Darwinism

IN NATURE, No. 30, I attempted to show that the analogy between Mr. Darwin's teachings as regards plants and animals, and the conclusions of comparative philologists, broke down, when we compared man's conscious influence on plants, &c., to his more and more enlightened control of language. Man's influence on organic forms tends to produce variety, while, with increase of knowledge, language is becoming more uniform. Mr. Ransom (No. 32) replied that the difference I insisted on seemed imaginary; and if man's object was to produce uniformity in plants or animals, that then the domesticated species would be likely to become less varied than the wild species of the family. Now it seems to me that if man had any such intention, no care on his part could produce permanent types yielding so little divergence in the individuals during enormous time as those produced by nature; a permanence so marked that geology only throws light on the law of evolution, in anything like a direct way, through the study of the mammalia (see Prof. Huxley's recent address on the progress of Palæontology), and even with regard to the mammalia naturalists of high standing refuse to see anything but permanent and all but uniform types, necessitating the hypothesis of special creation. How man could obtain by any possible efforts (and with some breeds his aim is uniformity) to maintain species as invariable as nature has done, is what is hard to conceive.

On the other hand, as man's mental faculties become blunter, his consciousness less vivid, and his material conditions harder, his language is more and more in a state of flux, branching forth continually into dialects which mark one group of men from another. Thus in some Polynesian islands we have a number of languages as distinct as those of great part of Europe; and missionaries complain that the Bible requires to be translated anew to the same tribe more than once in a century; in some cases the very numerals in a few generations becoming changed, partly from whimsical customs, and partly from want of frequent intercourse, and of any literature being at the disposal of the tribe. In the progress of time, we may look forward to a period when the language of Shakespeare, Milton, and Addison, which is considered as good English as that of our daily papers—may be the language of the world, but we can scarcely expect that the planet will ever hold only one species of animal or plant. S. J.

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